

**Detailed Description Text - DETX (7):**  
 The probe apparatus of this embodiment has a heated gas spray unit 11 as a heating means for heating the object. The heated gas spray unit 11 sprays a heated gas (e.g., air) to the wafer W which is passing through the loading/unloading port 9A when the opening/closing door 10 is opened. The heated gas spray unit 11 comprises a heated gas injection mechanism 12 incorporated in the opening/closing door (to be referred to as the "door" hereinafter) 10, a gas heating mechanism 14 connected to the heated gas injection mechanism 12 through a pipe 13A, and a solenoid valve 15 connected to the gas heating mechanism 14 through a pipe 13B. As the gas heating mechanism 14, a heating means such as an electric heater or a ~~waterbath~~ can be employed. The ~~waterbath~~ is a known mechanism which can generate a high-temperature gas of about 80.degree. C. and a low-temperature gas of about -30.degree. C. from a high-pressure gas (air) of, e.g., about 30.degree. C. The solenoid valve 15 is opened in synchronism with the opening operation of the door 10 to supply a gas at a predetermined pressure to the gas heating mechanism 14.

**Claims Text - CLTX (2):**  
 the inspection step of inspecting predetermined characteristics of a ~~semiconductor~~ wafer, the inspection step including at least inspection in a first environment which is at a first temperature; and

**Claims Text - CLTX (3):**  
 the unloading step of unloading said a ~~semiconductor~~ wafer which has undergone the inspection step, the unloading step including heating said ~~semiconductor~~ wafer to a temperature at which moisture condensation does not occur on a surface of said ~~semiconductor~~ wafer during transfer of said object from said first environment to a second environment which is at a second temperature greater than said first temperatures wherein said step of heating said ~~semiconductor~~ wafer includes spraying a heated gas of a predetermined temperature to said ~~semiconductor~~ wafer subjected to the inspection step at a loading/unloading port of an inspection chamber.

**Claims Text - CLTX (4):**  
 2. A method according to claim 1, wherein the step of spraying a heated

U	I	Document ID	Issue Date	Pages	Title
4	<input checked="" type="checkbox"/>	US 6475291 B1	20021105		Method and apparatus for decomp layers for impurity analysis of
5	<input checked="" type="checkbox"/>	US 6286202 B1	20010911		System for mounting a plurality circuit substrate
6	<input checked="" type="checkbox"/>	US 6273992 B1	20010814		Method and apparatus for decomp layers for impurity analysis of
7	<input checked="" type="checkbox"/>	US 6249132 B1	20010619	11	Inspection methods and apparatus
8	<input checked="" type="checkbox"/>	US 6155098 A	20001205	11	Dewpoint sensor

**(12) United States Patent**  
**Amemlya**

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 (45) Date of Patent: **Jun. 19, 2001**

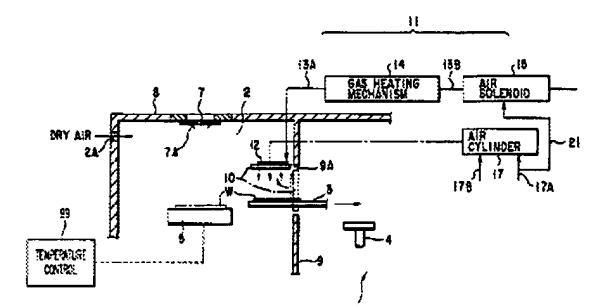
(54) **INSPECTION METHODS AND APPARATUSES**  
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 (\*) Notice: Subject to any disclaimer, the term of this patent is extended or adjusted under 35 U.S.C. 154(b) by 0 days.  
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 (51) Int. Cl.<sup>7</sup>: G01R 31/02; G01R 1/04  
 (52) U.S. Cl.: 324/760; 324/754; 324/58.1  
 (53) Field of Search: 324/754, 760, 324/755, 159.1

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**ABSTRACT**  
 In the embodiment of this invention, a probe apparatus includes a loader chamber having lock for conveying the wafer, a probe chamber arranged next to the loader chamber and having a main chuck movable to the X, Y, Z, and  $\theta$  directions, a partition for separating the probe chamber from the loader chamber, and a door for opening/closing the loading/unloading port of the wafer, which is formed in the partition. This probe apparatus inspects the electrical characteristics of the wafer while supplying dry air at a temperature at which moisture condensation does not occur into the probe chamber to cool the wafer through the main chuck. A heated gas spray unit sprays a heated gas onto the wafer which is moving from the probe chamber to the loader chamber through a loading/unloading port, thereby heating the wafer to a temperature higher than room temperature.

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